



Emoting Puppets

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TOOLS:

- [Black marker \(1\)](#)
- [Pencil \(1\)](#)
or marking pen.
- [Photocopier \(1\)](#)
- [Printer \(1\)](#)
- [Scissors \(1\)](#)
- [Sewing machine \(1\)](#)
optional.
- [Utility knife \(1\)](#)



PARTS:

- [Muslin \(1\)](#)
1/3 yards.
- [Felt \(1\)](#)
1/3 yard of felt, wool or artificial.
- [Battery holder \(2\)](#)
Cr1225.
- [Lithium 3V battery \(2\)](#)
- [Tactile switch \(2\)](#)
- [LEDs \(1\)](#)
for male puppet: 5mm yellow.
- [Fabric \(1\)](#)
1/3 yard printed fabric.
- [Batting \(1\)](#)
- [Conductive thread \(1\)](#)
- [Pattern \(1\)](#)
download and print from files.
- [Embroidery thread \(1\)](#)
pink and black.
- [Embroidery needle \(1\)](#)

SUMMARY

Finger puppets are fun storytelling devices that provide hours of imaginative play. With a mere wag of a finger, your puppet comes to life and begins its theatrical performance.

Your puppet's persona is predominately determined by its design. Is it big and clumsy? Slender and refined? Jolly with a knobby nose, or nervous with beady eyes? By adding electronic components — LEDs, a battery, and a switch — your puppet can blush, turn yellow with fear or green with envy, or have its heart pulse in excitement.

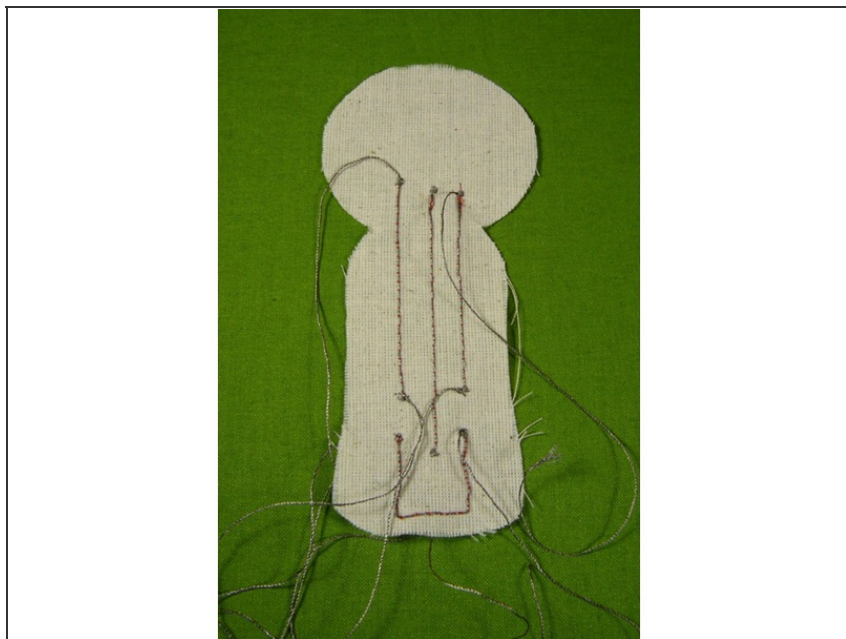
The circuitry for each puppet can be sewn by hand (or machine-stitched, if you prefer), so grab your LEDs, and let's bring a few puppets to life.

Step 1 — Cut the pattern.



- The male and female puppets in this tutorial were inspired by Kwaidan: The Story of O-Tei, the Japanese tale of fated love, death, and karmic rebirth. If you're not familiar with the story, don't worry; they are perfectly suited to play out any modern-day tragic love story. You will perform Steps 1–3 once for the male puppet and once for the female puppet, with slight alterations for the female hair and body forms.
- Print the pattern from the file.
- Using scissors, cut out all 5 pieces of the pattern.
- With a pencil or marking pen, trace patterns B–E onto felt. Cut out all 6 pieces (2 pieces for pattern B).
- Trace pattern A onto a piece of muslin and cut out the form. Transfer the dotted lines from pattern A onto your muslin. The dotted lines will be your circuit path.
- Note: Pattern B (2 pieces) is the puppet's main form; patterns C–D are the hair; and pattern E is the upper torso.

Step 2 — Sew the circuit path.

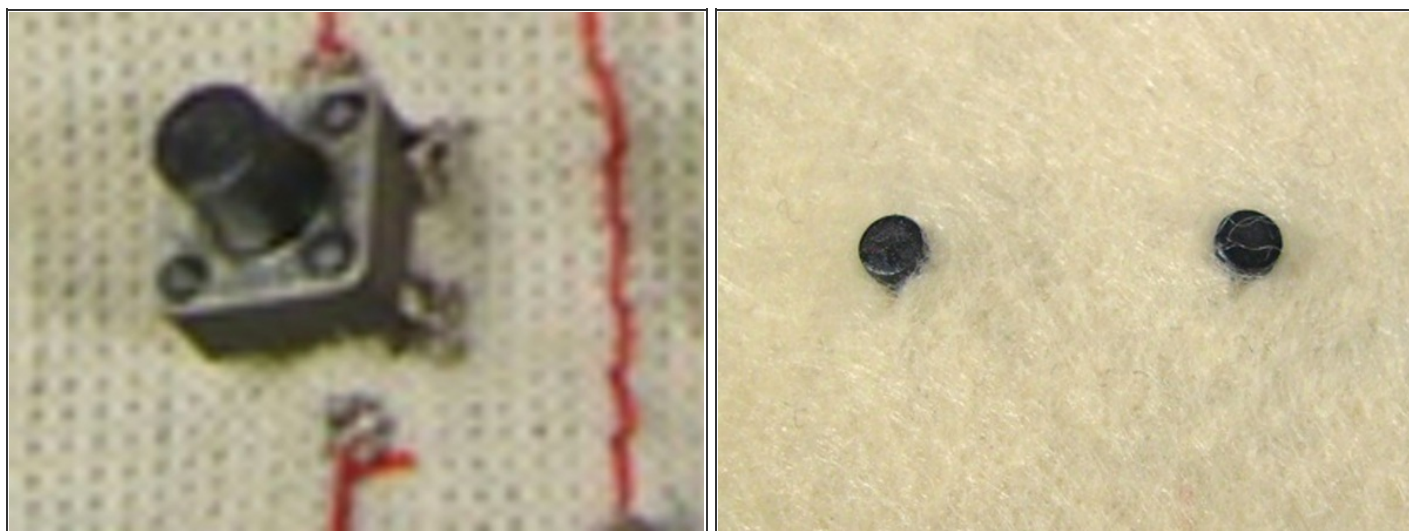


- In pattern A, the center line (marked on the pattern with a “+”) will be the positive path leading to the positive leads of the LEDs and the positive terminal of the battery. The 2 outer paths will be our grounds, each connecting to a switch, the negative terminal of an LED, and the negative terminal of the battery.
- If you’re using a sewing machine to sew your circuit, spool a bobbin of conductive thread and place it in your machine. Use ordinary thread for your top thread. If you are hand-stitching, thread the needle with only conductive thread, using a bookbinder’s knot.
- By machine or by hand, sew the circuit along your traced lines onto the muslin, leaving 5" of loose thread on each end once you have completed sewing. You will use this extra loose thread later to sew on the electronic components.
- Knot the conductive and ordinary thread together at the beginning and end of each circuit path (the points designated on the pattern). Cut the loose strands of ordinary thread (not the conductive thread).

Step 3 — Sew the electronic components.



- Now grab your LEDs. We'll walk step-by-step through the male puppet's circuits for the 2 LEDs in his face, yellow and red. (The female puppet is wired a bit differently, with blushing cheeks and a beating heart; see the note at the end of Step 3 before you sew her circuits.)
- Pierce the negative leg (the one marked in black) of one of your LEDs through point 1 on the muslin, and the negative leg of the other through point 5. Pierce the positive legs of both LEDs near point 3.
- Using needle-nose pliers, curl the legs of the LEDs into loops. This will make it easier to sew the LEDs onto the muslin.
- Thread the loose conductive thread from point 1 through the eye of your needle and create a bookbinder's knot. Sew the negative leg (marked with black) of one of your LEDs onto the muslin. Repeat for the second LED, sewing it to point 5.
- Thread the loose conductive thread from point 3 into a needle. Now sew the positive legs of each LED onto the muslin.

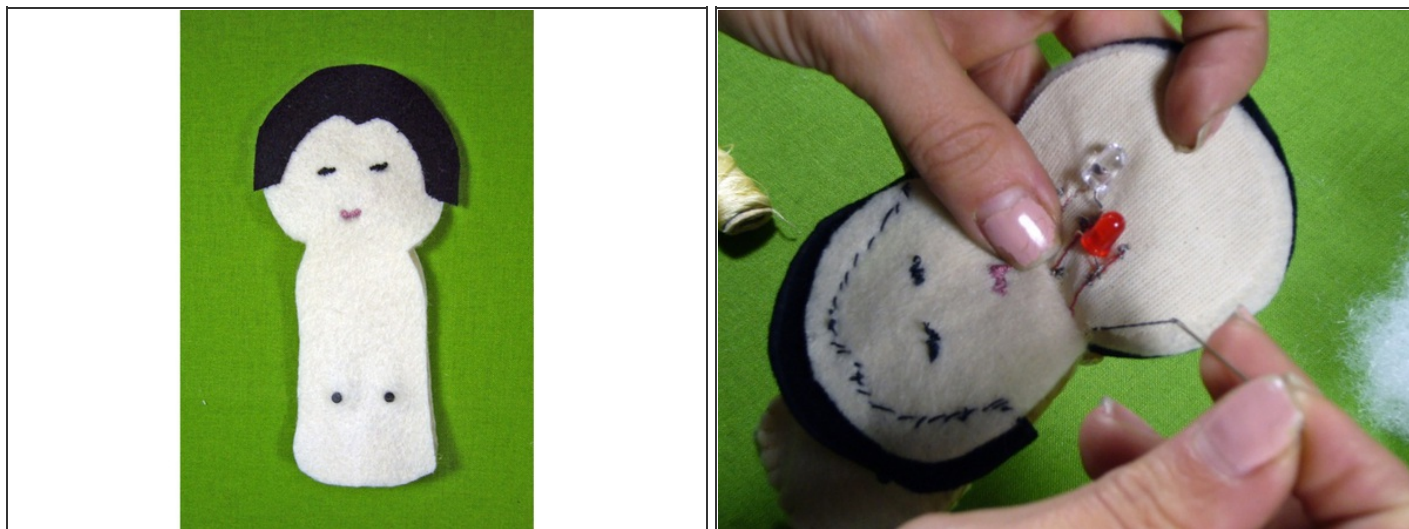
Step 4 — Sew the electronic components, continued.

- Grab one of your switches. We are using push-button momentary switches in our project. Pressing the button of a momentary switch closes the switch, allowing electricity to flow. Flip the switch over. Notice that there is a line down the center of the switch. This line denotes which 2 leads of the switch are connected. The leads on the same side of the line are connected. The leads diagonally across from each other become connected when the button is pressed.
- Making sure that the centerline of your switch is in a horizontal position, pierce the switch through the muslin fabric between points 2 and 7. Using your needlenose pliers, gently bend the leads of the switch flush to the fabric. Sew the loose conductive thread from point 2 to the top leads of the switch. Repeat for the bottom leads, using the loose thread from point 7.
- Note: make sure that the threads from points 2 and 7 do not cross or touch.
- Repeat for the second switch, placing it between points 6 and 8, again making sure the threads don't touch.

Step 5 — Sew the electronic components, continued.



- Now it's time to sew on your battery pack. Each battery holder has 2 leads: a positive and a negative. The positive lead of the battery is typically marked with a plus. Flip over your muslin piece. You are going to sew your battery pack on the opposite side of the fabric. This will ensure easy access to your battery pack in order to change your battery. Pierce the positive lead through point 4 and the negative lead through the muslin, near the bottom of the path (between points 7 and 8). With needlenose pliers, bend the positive and negative leads flush to the fabric. Sew the loose conductive thread from point 4 to the positive lead, securing the battery holder to the fabric.
- Thread your needle with a separate piece of conductive thread. Sew the negative lead of the battery pack to the bottom circuit path (between points 7 and 8).
- Congratulations! Your circuit is now complete!
- Drop in a battery and test out your circuit by pressing the switches. Your LEDs should light up.
- To ensure that your circuit does not short at any point, cover your sewn circuit paths with a thin piece of tape or a liquid seam sealant like Fray Check.
- Blushing cheeks and a beating heart. You'll notice the female puppet is wired differently, with 2 LEDs in her cheeks, both connected to the left switch, plus a third LED in the middle of Pattern A — her beating heart — connected to the right switch.
- Sewing them is easy: the center red line is the positive path, just like in the male. All positive leads for all 3 LEDs are sewn with conductive thread directly onto the center path. The negative leads for the upper LEDs (cheeks) connect to each other, and then down to the left switch. The negative lead for the lower LED (heart) is sewn onto the farthest right path that leads to the second switch.

Step 6 — Create the male form.

- Now that you have successfully sewn your circuitry, it's time to sew your form together.
- Grab your felt pieces of pattern B. Using an embroidery needle and ordinary thread, embroider the eyes, nose, and/or mouth onto one of the pieces. Hand-stitch the hair (felt cutout of pattern D) onto your embroidered felt. This will be the front of your puppet. Hand-stitch the felt piece of pattern C onto your other felt piece of pattern B. This will be the back of your puppet.
- Place the front felt layer of your puppet directly on top of your circuit layer. Using a utility knife, slice the top layer of your felt directly above your switches. Push the switches through to the top of the felt.
- Place the front felt layer, the middle circuit layer, and the back felt layer on top of each other. Starting from the neckline, stitch all 3 layers of each side together. For the bottom, stitch only the top layer and muslin layer together. You want to leave the bottom of your puppet open.

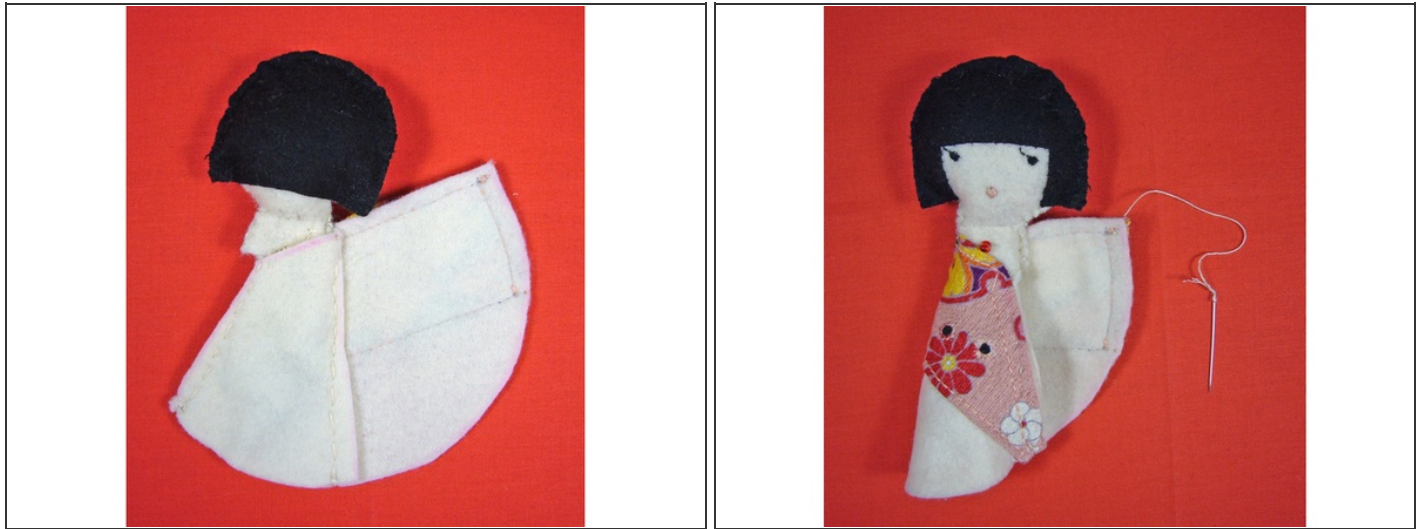
Step 7 — Create the male form, continued.

- Grab some stuffing and place it both in front of and behind the middle circuit layer. This will help diffuse the light. Stitch all 3 layers together, sewing around the entire head.
- Hand- or machine-sew a piece of fabric onto the felt piece of pattern E. Using a utility knife, make a 2" slice in the middle of the felt.
- Slip the puppet head through the center and fold both sides flush to each other. Sew the 2 sides.
- Pull shirt down to cover switches. Congratulations! You're halfway there. Your first puppet is complete.

Step 8 — Craft the female form.

- The female puppet version is created in the exact same fashion as the male, with slight modifications to the form and circuit. Similar to the male version, cut out the patterns and sew the circuitry onto the muslin. The main female body form (pattern B) is truncated (from only the shoulder up) compared to the male form. Her dress form (pattern E) will make up her body.
- First, hand- or machine-stitch decorative fabric onto the dress form pattern E (the semicircular piece). Place it down, wrong side up, with the curved edge facing down.
- Place your puppet assembly right side up onto the dress form. Fold the left side of the dress form over, aligning the curved edges to each other.
- Using a utility knife, slice the top layer of your felt directly above your switches. Push the switches through to the top of the felt. With embroidery thread, stitch around the slice to ensure that the fabric doesn't fray.

Step 9 — Craft the female form, continued.



- Place your puppet assembly face down. Sew felt piece pattern B onto the dress form, covering up the circuit layer.
- Place your puppet assembly right side up. Fold over the right side of the dress form, stitching it down to the middle of her torso.
- Now both puppets are complete. It's time to put on your show.

This project first appeared in [CRAFT Volume 03](#), pages 60-67.

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